



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

EJ

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,048	08/15/2001	Masaru Ishiwa	0941.65751	1182

7590 07/08/2003

Patrick G. Burns, Esq.  
GREER, BURNS & CRAIN, LTD.  
Suite 2500  
300 South Wacker Dr.  
Chicago, IL 60606

[REDACTED] EXAMINER

RAO, SHRINIVAS H

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2814

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/930,048	ISHIWA ET AL.
	<b>Examiner</b> Steven H. Rao	<b>Art Unit</b> 2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 27 May 2003.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 August 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)      4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.      6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d), claiming priority from Japanese Patent Application No. 2000-391366 filed on December 22, 2000 which papers have been placed of record in the file.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filed August 15, 2001.

The references on PTO 1499 submitted on 08/15/2001 are acknowledged. All the cited references have been considered. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

### ***Drawings***

The drawings filed on August 15, 2001 have been accepted by the draftsman.

***Election/Restrictions***

Claims 6 to 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No.6.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ueda et al. (U.S. Patent No. 5,838,412, herein after Ueda).

With respect to claim 1 Ueda describes a liquid-crystal display unit comprising: a first board having a signal line, a scanning line and a pixel electrode ( Ueda col. 1 lines 15-40); a second board having a common electrode, the second board opposing said first board; ( Ueda col. 14 lines 21-24)

a liquid-crystal layer provided between said first board and said second board; ( Ueda Figure 1) and a third board having at least one of a signal-line driver driving said signal line and a scanning-line driver driving said scanning line, the third board being separate from said first board and said second board. ( Ueda figure 22, col. 19 lines 20-26)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U. S. Patent No. 5,838,412, herein after Ueda) as applied to claim1 above and further in view of Casson et al. (U.S. Patent No. 5,502,889 herein after Casson)..

With respect to claim 2 Ueda describes the liquid-crystal display unit as claimed in claim 1, wherein said third board is formed of a same material as said first board.

Ueda describes two boards without specifying the material they are made of.

However, Casson in col. 5 lines 20-30 describes a multi layer electronic circuit of at least three circuit boards all made of the same material and also coated with same materials like metal dust and epoxy layers thereon to form multi layers with similar coatings so as to reduce the internal mechanical stress and forming more fail proof connections and form circuits that with stand thermal cycling better.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Casson's boards of same material in Ueda's boards to form multi layers with similar coatings so as to reduce the internal mechanical stress and forming more fail proof connections and form circuits that with stand thermal cycling better. (Casson col. 8 lines 32- 40).

Art Unit: 2814

With respect to claim 3 Ueda describes the liquid-crystal display unit as claimed in claim 1, wherein said third board is connected to said first board by a flexible cable. ( Ueda figure 16 B, col. 13 lines 1-14).

With respect to claim 4 Ueda describes the liquid-crystal display unit as claimed in claim 1, wherein said third board is connected to said first board by a wire bonding. ( Ueda col. 14 lines 1-17).

With respect to claim 5 Ueda describes the liquid-crystal display unit as claimed in claim 1, wherein said third board is connected to said first board by a flip-chip bonding. ( Ueda col. 1 lines 60-61)

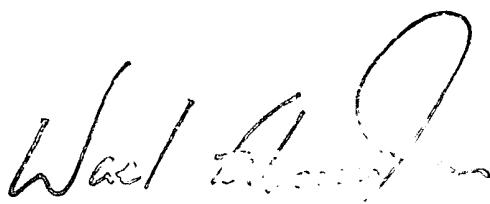
Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

  
Steven H. Rao

Patent Examiner

June 26, 2003.

  
Supervisory Primary Examiner  
Technology Center 2800